Together We Power The World

Report # 113251 **Sample # 1** **UGI Development Company** **Received 05/21/2012** **Date May 31, 2012**

Serial Number: G244201	Equipment Number: GSU T5	Container Id: LAB ASSIGNED # IAJ686		Phase: 3	
Substation Name: New 69KV Sub	Preservation System: Gas Blanketed	Miscellaneous Id:		Ambient Temp °C: 23	
Design Type: Shell Type	Transformer Name: T5	Second Name:		Humidity: 42	
Manufacturer: GEP	Transformer Type: Transformer	Sample Point: Main Tank Bottom		Top Oil Temp °C: 74	
MFR. Year: 2010	Maximum kV: 66	Sequence #:		Peak Temp °C:	
Cooling System: ONAF	Maximum MVA: 65	Sample Date/By: 5/16/2012 1:50:00 PM JD, JR		Fluid Level:	
Fluid Type: Mineral	XFMR Oil Capacity: 4087 Gallons	Appr Type: XFMR		Pressure PSI:	
LTC MFR./Model:	LTC Type:	LTC Tank Type :	LTC Capacity:	Filter LTC:	

Dissolved Gas Analysis The dissolved gas analysis is run in accordance with ASTM D 3612 and IEC 60567. Values are reported in ppm vol/vol at STP and calibrated with gas-in-oil standards. Values before August 15, 2002 are reported at NTP and calibrated with gas standards.

Report #	Sample Date	Top Oil Temp °C	Hydrogen (H2)	Oxygen (O2)	Nitrogen (N2)	Methane (CH4)	Carbon Monox. (CO)	Ethane (C2H6)	Carbon Dioxide (CO2)	Ethylene (C2H4)	Acetylene (C2H2)	Total Gas	COMB GAS	EST TCG %	C2H4/ C2H2	Comb Gas Rate ppm/day
113251	**05/16/2012**	**74**	**11**	**13000**	**83400**	**7.4**	**835**	**0**	**3280**	**1.4**	**0**	**100535**	**855**	**0.72**	**0.00**	**3.99**
111090	02/21/2012	54	3.3	15600	69700	4.2	508	0	1950	0	0	87766	516	0.50	0.00	1.63
104632	06/03/2011	34	2.0	22500	76300	0.5	83	0	224	0	0	99110	86	0.08	0.00	

Overheating of cellulose. Condition is moderate. Resample in 6 months.

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Oil Quality Tests

Report #	Sample Date	Top Oil Temp °C	Water Content ppm D1533 IEC 60814	Relative Saturation %	Color D1500	D1816-1mm kV D1816	Interfacial Tension mN/m D971 ISO 6295	Neut. No. mgKOH/g D974	PF25C % D924	PF 100C % D924	Specific Gravity (Rel. Density) 60/60 D1298	Visual D1524
113251	**05/16/2012**	**74**	**14**	**4**	**L 0.5**	**40**	**48**	**< 0.01**	**0.001**	**0.136**	**0.887**	**Clear & Bright**
111090	02/21/2012	54	2	1	L 0.5	33	48	< 0.01	0.003	0.106	0.887	Clear & Bright
104632	06/03/2011	34	8	8	L 0.5	32	50	< 0.01	0.004	0.153	0.886	Clear & Bright

The dryness rating of this insulation system (solid and liquid insulation) is considered to be in excellent condition and corresponds to a cellulose water content of 0.5% or less. A system in this condition will minimalize the aging of the cellulosic insulation, reduce the risk of water vapor bubble formation, and allow higher overload capabilities. The results indicate that the dielectric liquid is acceptable for continued in-service use.

Additional Oil Quality Tests

Report #	Sample Date	Top Oil Temp °C	Sulfur, Corrosive D 1275B D1275B	Sulfur, Corrosive Tarnish Level (D 1275B) D130
113251	**05/16/2012**	**74**	**Non-corrosive**	**2d**

Sulfur by D1275B is acceptable.